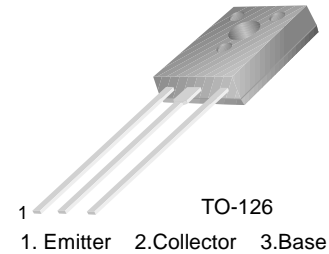


Feature

- High Dc Current Gain
- Low Collector Saturation Voltage
- Built-in a Damper Diode at E-C
- High Power Dissipation : $P_C = 1.3W$ ($T_a=25^\circ C$)

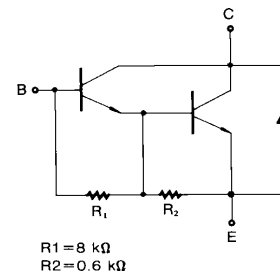


NPN Silicon Darlington Transistor

Absolute Maximum Ratings $T_C=25^\circ C$ unless otherwise noted

Sym- bol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current (DC)	3	A
I_{CP}	*Collector Current (Pulse)	5	A
P_C	Collector Dissipation ($T_a=25^\circ C$)	1.3	A
P_C	Collector Dissipation ($T_C=25^\circ C$)	15	W
T_J	Junction Temperature	150	W
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ C$

* $PW \leq 10ms$, duty Cycle $\leq 50\%$



Electrical Characteristics $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	$V_{CB} = 100V, I_E = 0$			10	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5V, I_C = 0$			2	mA
h_{FE1} h_{FE2}	*DC Current Gain	$V_{CE} = 2V, I_C = 1.5A$ $V_{CE} = 2V, I_C = 3A$	2K 1K		20K	
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 1.5A, I_B = 1.5mA$		0.9	1.2	V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$I_C = 1.5A, I_B = 1.5mA$		1.5	2	V
t_{ON}	Turn ON Time	$V_{CC} = 40V, I_C = 1.5A$		0.5		μs
t_{STG}	Storage Time	$I_{B1} = - I_{B2} = 1.5mA$		2		μs
t_F	Fall Time	$R_L = 27\Omega$		1		μs

* Pulse test: $PW \leq 350\mu s$, duty Cycle $\leq 2\%$ Pulsed

h_{FE} Classification

Classification	O	Y	G
h_{FE1}	2000 ~ 5000	4000 ~ 12000	6000 ~ 20000

Typical Characteristics

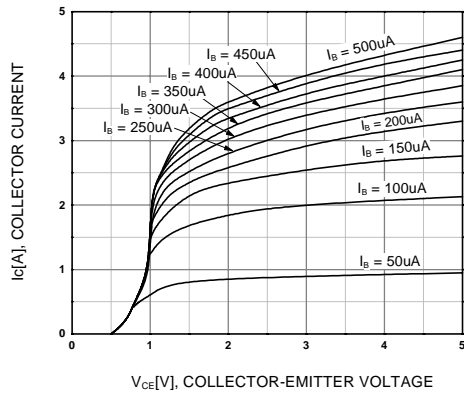


Figure 1. Static Characteristic

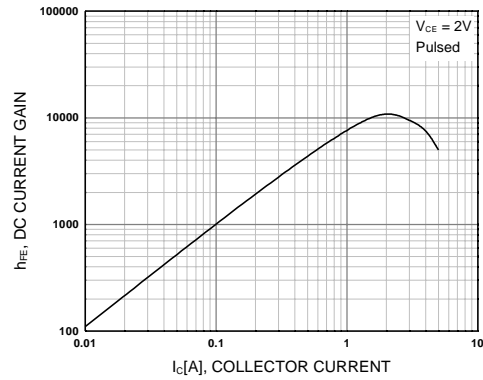


Figure 2. DC current Gain

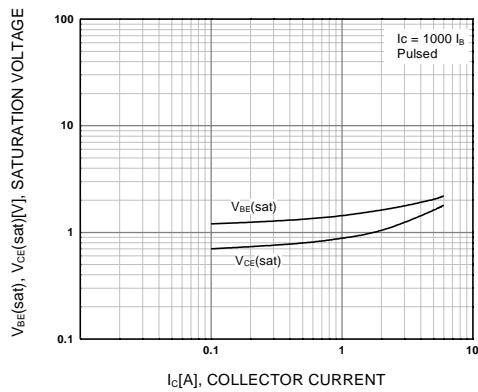


Figure 3. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

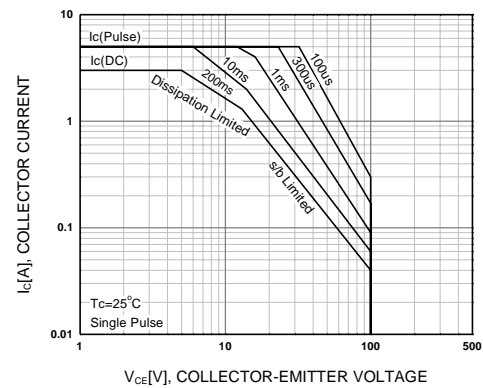


Figure 4. Forward Bias Safe Operating Areas

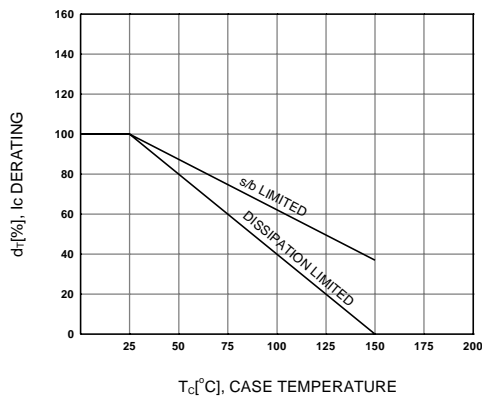


Figure 5. Derating Curve of Safe Operating Areas

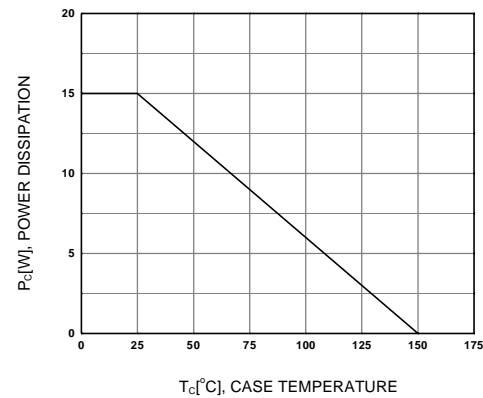
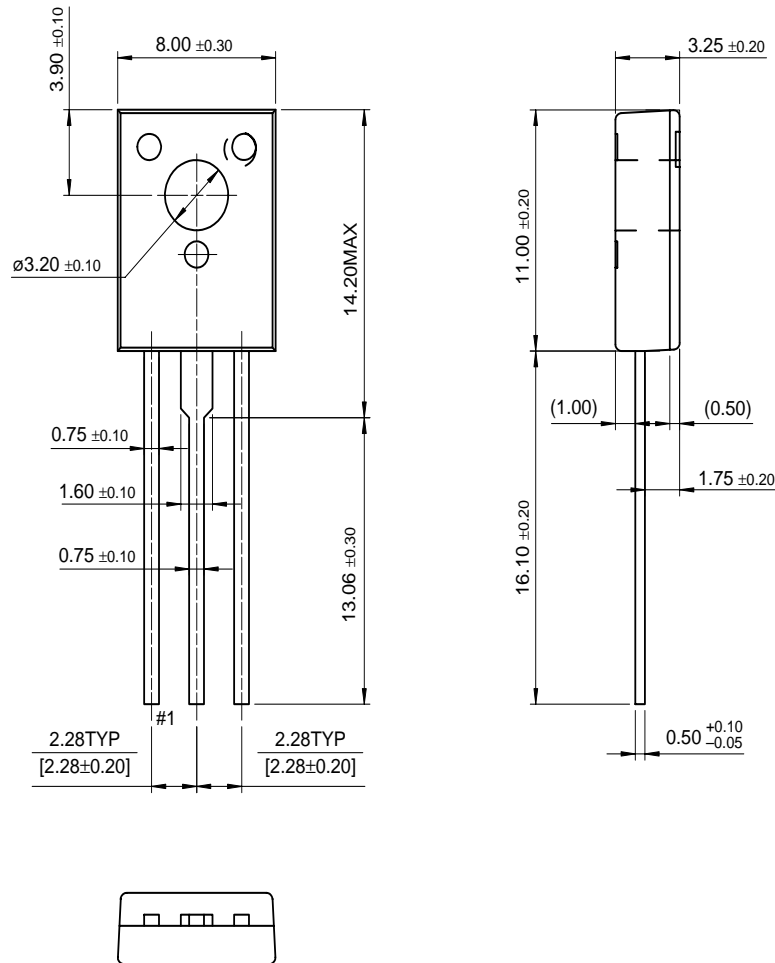


Figure 6. Power Derating

Package Dimensions

TO-126



Dimensions in Millimeters

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